

$$f(x) = x^6 + x^4 - 16x^2 - 16 \quad | \oplus$$

$$f(-x) = x^6 + x^4 - 16x^2 - 16 \quad | \ominus$$

$\pm 1, \pm 2, \pm 4, \pm 8, \pm 16$  4 complex.

$$\begin{array}{r|rrrrrrrr} & & 0 & 1 & 0 & -16 & 0 & -16 \\ \hline \end{array}$$

$$\begin{array}{r|rrrrrrrr} 2 & 1 & 2 & 5 & 10 & 4 & 8 & -16 \\ \hline \end{array}$$

$$f(x) = (x-2)(x^5 + 2x^4 + 5x^3 + 10x^2 + 4x + 8)$$

$$\begin{array}{r|rrrrrr} & 1 & 2 & 5 & 10 & 4 & 8 \\ \hline \end{array}$$

$$\begin{array}{r|rrrrrr} -2 & 1 & 0 & 5 & 0 & 4 & 0 \\ \hline \end{array}$$

$$f(x) = (x+2)(x-2)(x^4 + 5x^2 + 4)$$

$$f(x) = (x+2)(x-2)(x^2+4)(x^2+1)$$

$$x = \{2, -2\}$$

$$x = \pm 2i, \pm i$$

③⑦  $f(x) = 2x^4 - x^3 + 7x^2 - 4x - 4$   
 1 and  $2i$   $-2i$

$$\begin{array}{r|rrrrr} & 2 & -1 & 7 & -4 & -4 \\ 1 & 2 & 1 & 8 & 4 & 0 \end{array}$$

$$f(x) = (x-1)(2x^3 + x^2 + 8x + 4)$$

$$2i \quad \overline{\hspace{10em}}$$

$$f(x) = (x-1)\left(x + \frac{1}{2}\right)(2x^2 + 8)$$

$$f(x) = (x-1)(2x+1)(x^2+4)$$

$$\begin{aligned} x^2 - 4 &= 0 \\ x^2 &= 4 & x = \pm 2i \end{aligned}$$